

**REMARKS/ARGUMENTS**

This is in response to the office action dated November 25, 2005. Claim 4 has been canceled; claims 1, 5, 7 and 8 have been amended; and claims 9-11 have been added. Claims 1-3 and 5-11 remain in consideration. No new subject matter has been added.

The Office Action rejected claims 1-8 under 35 U.S.C. 103(a) as being unpatentable over USPN 6,343,250 to Kuras et al (hereinafter "*Kuras*") in view of USPN 5,060,176 to Nawa, et al., (hereinafter "*Nawa*").

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Before a reference can be found to disclose a feature by virtue of its inherency, one of ordinary skill in the art viewing the reference must understand that the unmentioned feature at issue is necessarily present in the reference. *Continental Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 1268 69, 20 USPQ 2d 1746, 1749 50 (Fed. Cir. 1991). The test of inherency is not satisfied by what a reference "may" teach. *Id.*, 20 USPQ 2d at 1749 50 ("Inherency . . . may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient."). It is the responsibility of the examiner to provide a basis in fact and/or technical reasoning to reasonably support the determination that inherent characteristics necessarily flows from the teachings of the applied prior art. *Ex parte Levy*, 17 USPQ 2d 1461, 1464 (B.P.A.I. 1990) (emphasis original). *M.P.E.P.* § 2112.

Furthermore, it is well settled that, under 35 U.S.C. § 103, the obviousness of an invention cannot be established by combining the teachings of the prior art absent some teaching, suggestion or incentive supporting the combination. See *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 227 U.S.P.Q. 657 (Fed.

Cir. 1985); *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 221 U.S.P.Q. 929 (Fed. Cir. 1984). The law followed by our court of review and the Board of Patent Appeals and Interferences is that “[a] prima facie case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art.” *In re Rinehart*, 531 F.2d 1048, 1051, 189 U.S.P.Q. 143, 147 (C.C.P.A. 1976). See also *In re Lalu*, 747 F.2d 703, 705, 223 U.S.P.Q. 1257, 1258 (Fed. Cir. 1984) (“In determining whether a case of prima facie obviousness exists, it is necessary to ascertain whether the prior art teachings would appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification.”)

More specifically, the Board of Patent Appeals and Interferences has recognized that an examiner relying on the theory that a person of ordinary skill in the art is looking for an alternative is under the burden to establish why the alternative would be sought. *In re Jones*, 62 USPQ2d 1206 (B.P.A.I. 2001) (unpublished). Prior art may be considered not to teach an invention particularly when the stated objectives of the prior art reinforce such an interpretation. See *WMS Gaming Inc. v. International Game Tech.*, 184 F.3d 1339, 51 USPQ2d 1385 (Fed. Cir. 1999). A prior art reference may be considered to teach away from the proposed combination when such combination makes a prior art reference inoperable for its intended purpose. See *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) (finding no suggestion to modify a prior art device where the modification would render the device inoperable for its intended purpose). See also *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (C.C.P.A. 1959) (Obviousness rejection is improper if substantial reconstruction or redesign of the elements or change in the basic principles of operation of the prior art references is necessary to arrive at the invention.).

Applicants respectfully traverse the rejections of claims 1-8 under 35 U.S.C. 103(a) as

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being unpatentable over *Kuras* in view of *Nawa* in as much as the cited prior art fails to teach or suggest all the claim limitations of the instant invention, and the cited prior art provides no adequate teaching, suggestion or incentive supporting the combination. In fact, any combination of *Kuras* and *Nawa* requires modifications to either of such a nature to require substantial reconstruction or redesign of the elements and changes in the basic principles of operation of the prior art references to arrive at the present invention.

Claim 1 of the instant invention for example, sets forth a method for determining the speed of a transmission member in a hybrid electric powertrain, said powertrain including a hybrid transmission having at least one electric motor operatively coupled to said transmission member and at least one rotation sensor for operatively sensing rotation of said preselected transmission member. The method of exemplary claim 1 includes, *inter alia*, providing a first signal indicative of the speed of said transmission member calculated from the output from said at least one rotation sensor, and providing a second signal indicative of the speed of said transmission member calculated from electrical phase information of said at least one electric motor and an effective rotation ratio between the transmission member and said at least one electric motor. The method acts by selecting as the speed of the transmission member said second signal when predetermined conditions indicate that the first signal is unreliable. Similar diagnosis aspects are found in independent claims 5, 7 and 8 for determining speed of the transmission member. Applicants have in this response further amended claims 1, 5, 7 and 8 to recite electrical phase information of the at least one electric motor in the calculation of the speed of the transmission member in an effort to more particularly point out and distinctly claim the subject matter regarded as the invention.

Claim 2 depends from claim 1 and further recites additional limitation respecting the

transmission member that is the object of speed determination of claim 1. Claims 3 and 6 depend from claims 1 and 5, respectively, and further recite additional limitations directed toward the details of fault diagnosis. New claim 9 depends from claim 8 and further recites additional limitation respecting specific sensor hardware. New claims 10 and 11 depend from claim 8 and further recite additional limitations respecting fault diagnosis aspect of the first and second speed signals of claim 8, respectively.

*Kuras* discloses a hydraulic motor in conjunction with a hydrostatic transmission. A variable displacement pump is driven by an engine and in turn is fluidically coupled to the hydraulic motor. A significant portion of *Kuras*' disclosure is devoted to teaching the control of the hydraulics, e.g. hydraulic pump and motor and electro-hydraulics associated therewith, as relate to zero machine speed transitions. In fact, the claims of *Kuras* are all directed toward electro-hydraulic controls. *Nawa* discloses a transmission testing apparatus in an arrangement wherein an electric motor is coupled to a transmission through a speed increasing device. The electric motor and speed increasing device simulate driving force and inertial characteristics of an internal combustion engine.

In the case of both *Kuras* and *Nawa*, respective motor speeds (hydraulic and electrical) are provided merely by speed sensing hardware. In fact, all speed sensing disclosed in both *Kuras* and *Nawa* is with respect to speed sensing hardware. Nowhere does either reference disclose using electrical phase information in calculating transmission member speed as required in limitations recited with respect to all independent claims 1, 5, 7 and 8. *Kuras* and *Nawa* both fail to teach or suggest, either explicitly or inherently, all limitations as presently claimed in all independent claims. As such, the disclosures of each are, as a threshold consideration, inadequate to support any combination thereof which would

yield the present invention as claimed since the combination of references lack all of the limitations of the present claims.

Apart from and in addition to the lack of teaching of the limitations of the present independent claims referenced above, there is inadequate motivation or suggestion to combine *Kuras* and *Nawa*. It should be readily appreciated by one skilled in the art that there is no analogous or equivalent functionality between the electric motor(s) of the hybrid transmission of the present invention and the hydraulic motor of *Kuras*. Similarly, there is no analogous or equivalent functionality or manner of use between the electric motor(s) of the hybrid transmission of the present invention and the electric motor of *Nawa*. One skilled in the art would simply not find motivation or suggestion with knowledge of *Kuras* and *Nawa* to make substitution of an electric motor used for purposes related to simulating an internal combustion engine in a transmission testing apparatus for a hydraulic motor used in a hydrostatic transmission in conjunction with significant electro-hydraulic controls.

Moreover, any proposed combination requires modifications to either or both *Kuras* or *Nawa* of such a nature to require substantial reconstruction or redesign of the elements and changes in the basic principles of operation of these references to arrive at the present invention. Mere substitution of the electric motor of *Nawa* into the electrostatic transmission of *Kuras* fails to yield a hybrid transmission. A hydrostatic transmission as disclosed in *Kuras* does not become a hybrid transmission merely through substitution of an electric motor for the hydraulic motor. Apart from functional operative differences between the present hybrid transmission invention and the proposed combination of *Kuras* and *Nawa*, any electric motor apparatus used to simulate an internal combustion driving force would require significant modification for application as a transmission component. Substitution of an

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electric motor into *Kuras* would require substantial reconstruction or redesign, in fact complete elimination and supplantation, of the hydraulic elements (e.g. hydraulic circuits, hydraulic pump, hydraulic motor and controls therefor) and change in the basic principles of operation of the *Kuras* and *Nawa* references in order to arrive at Applicants' invention. Additionally, as described above, nowhere in either *Kuras* or *Nawa* is there disclosed electrical phase information of at least one electric motor for any purpose including, significantly, for the speed determinations of the present invention. It can be appreciated that substantial reconstruction or redesign of the elements and changes in the basic principles of operation of *Kuras* and *Nawa* would be necessary to arrive at the Applicants' invention.

All independent claims 1, 5, 7 and 8 are therefore patentably distinguishable over the *Kuras* and *Nawa* references alone or in combination. Claim 2, 3, 6 and 9-11 which all depend from various ones of the independent claims, are similarly patentably distinguishable for the same reasons above and further for the reason that they additional limitations to respective base claims.

Applicants respectfully request reexamination of claims 1-3 and 5-8 and entry and examination of claims 9-11 of the present application in light of the arguments contained herein. Applicants believe that all claims are patentably distinguishable over *Kuras* in view of *Nawa*, and respectfully request that same be allowed to proceed to issue.

If the Examiner has any questions regarding the contents of the present response he may contact Applicants' attorney at the phone number appearing below.

Any fees associated with this response may be charged to General Motors Deposit Account No. 07-0960.

Respectfully submitted,



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Vincent A. Cichosz  
Registration No. 35,844  
Telephone: (248) 676-2798